# Draft Existing Use Determination and Rationale:

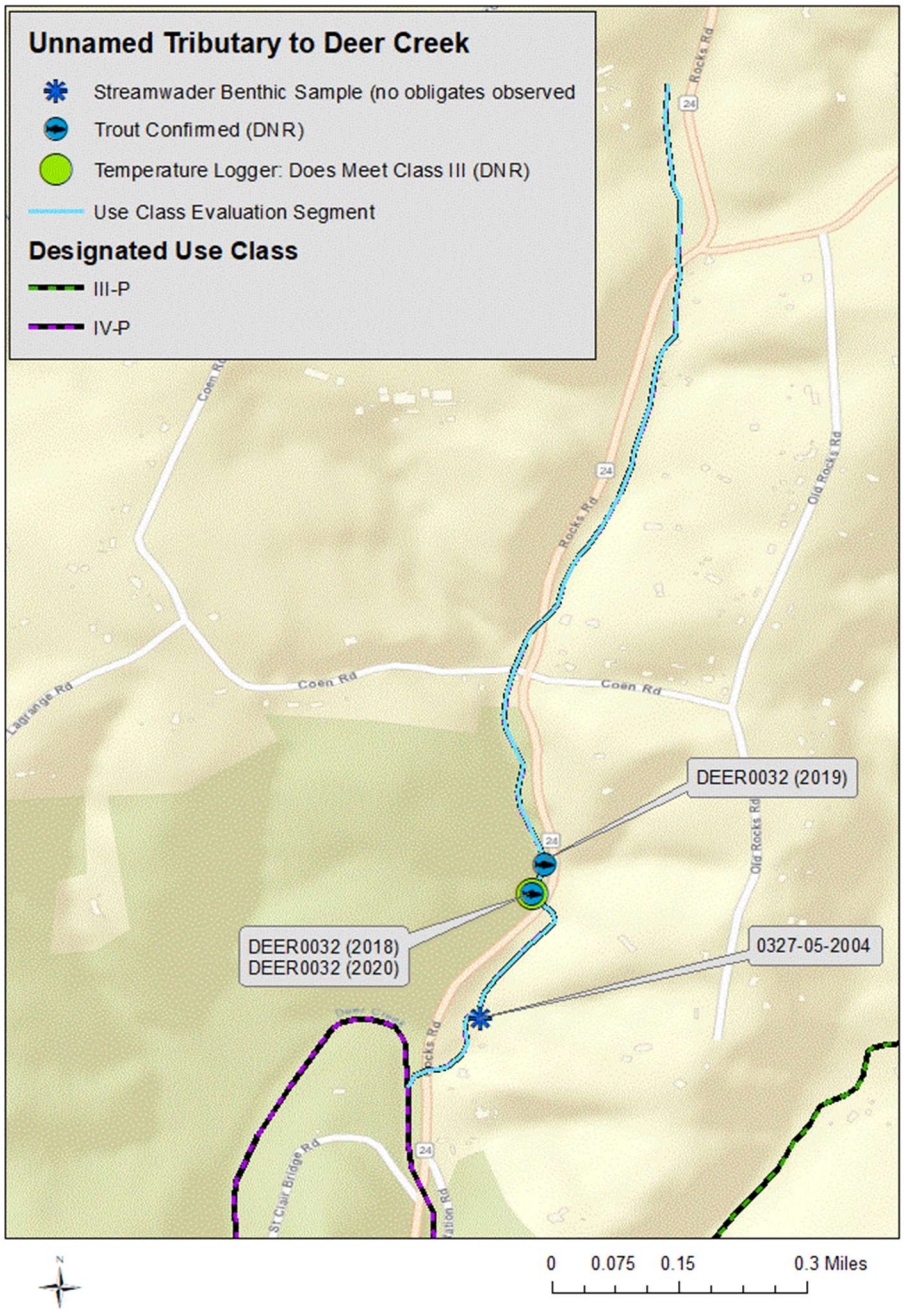
# Unnamed Tributary to Deer Creek (Harford County)

## August 17, 2020

**Description of Setting and Data Sources**

An unnamed tributary to Deer Creek (12-digit 021202020327), located partially in the northeast region of Rocks State Park in Harford County, is currently designated as Use Class IV-P. The waterbody segment potentially supports brook trout. The MDDNR Fisheries biologists conducted surveys of the tributary in 2018, 2019 and 2020. Stream Waders volunteers conducted a survey of this waterbody segment in 2004. The figure below shows the location and sampling stations of the waterbody being evaluated. A temperature logger was deployed in 2020 and data are presented in Table 1. Biological data results are presented in Table 2.

Figure 1


Unnamed Tributary to Deer Creek
Streamwader Benthic Sample (no obligates observed
Trout Confirmed (DNR)
Temperature Logger: Does Meet Class III (DNR)
Use Class Evaluation Segment
Designated Use Class
III-P
IV-P
Rocks Rd
Old Rocks Rd
Coen Rd
Lagrange Rd
St Clair Bridge Rd
DEER0032 (2019)
DEER0032 (2018)
DEER0032 (2020)
0327-05-2004
0
0.075
0.15
0.3 Miles

## Temperature Data for Unnamed Tributary to Deer Creek

A temperature logger was deployed in 2020. The data show this unnamed tributary is attaining Use III-P temperature criteria.

Table 1

| Date | Station ID | Stream | Data Submitter | # Temp Readings | Percent>20°C | Percent>24°C | Avg Daily Mean | Daily Max |
|---|---|---|---|---|---|---|---|---|
| 2020 | DEER0032 | UT to Deer Creek | MDDNR Fisheries | 6624 | 0.5% | 0% | 17.23 | 21.6 |

*Water temperature logger data assessed from June to August. The "Daily Max" represents the maximum temperature from June to August.

## Biological Data for Unnamed Tributary to Deer Creek

The MDDNR Fisheries Program conducted a brief qualitative electrofishing survey in 2018 and 2020 (Level 3 data[1]). One adult and one young of year brook trout were found. MDDNR Fisheries conducted quantitative surveys in 2019 and 2020 and the presence of self-sustaining brook trout was confirmed. The MDDNR Fisheries Program did not attempt to collect coldwater obligate benthic macroinvertebrate species.

There was 1 MDDNR Stream Waders sampling event (Level 2 data[2]) that occurred in 2004. The sampling event did not yield any coldwater obligate benthic macroinvertebrate species. Unless otherwise noted, benthic data submitted by MDDNR Stream Waders was identified to family level.

Table 2. Unnamed Tributary to Deer Creek Biological Data

| Date | Station ID | Stream | DATA SUBMITTER | Species | Count | Maturity |
|---|---|---|---|---|---|---|
| 10/11/2018 | DEER0032 | UT to Deer Creek | MDDNR Fisheries Program | brook trout | 1 | YOY |

[1] Level 3 data can be used to identify existing uses, justify a changing designated use classification, or making other regulatory decisions. Level 3 data must be accompanied by a Quality Assurance Project Plan (QAPP) consistent with USEPA guidelines, documentation of protocol or SOP, and be consistent with Maryland's assessment methodologies.

[2] Level 2 Data cannot be used to identify existing uses, justify changing designated use classifications, or making other regulatory decisions. It can be used to prioritize future monitoring.

| Date | Station ID | Stream | DATA SUBMITTER | Species | Count | Maturity |
|---|---|---|---|---|---|---|
| | | | | brook trout | 1 | Adult |
| 2019 | DEER0032 | UT to Deer Creek | MDDNR Fisheries Program | brook trout | 24 | Multiple year classes of adult and YOY |
| 8/26/2020 | DEER0032 | UT to Deer Creek | MDDNR Fisheries Program | Brook trout | 27 | Multiple year classes of adults and YOY |
| 4/27/2004 | 0327-05-2004 | UT to Deer Creek | MDDNR Stream Waders | - | - | - |

YOY - young-of-year

## DNR Fish Stocking

DNR has confirmed that this section of Deer Creek has never been stocked with trout.

## Existing Use Determination and Rationale for Unnamed Tributary to Deer Creek

*Current Use Class*: Class IV-P

*Existing Use Determination*: This unnamed tributary, from its confluence with Deer Creek located at [39.643704ºN, -76.412370ºW] and all upstream waters, supports self-sustaining brook trout and has water temperatures that have a $90^{th}$ percentile below 20°C, an average daily mean below 20°C, and daily max below 24°C.

*Is this Existing Use Determination Consistent with the Current (March 2020) Designated Use Class?* **No.** The existing use of this tributary, as described above, requires that water temperatures remain significantly colder than the water quality criterion established to protect the current use class (Class IV-P) designation. As a result, the existing use of this tributary to Deer Creek requires protections to maintain the cold water temperatures currently found in this tributary and different than those afforded by the current use class designation of IV-P.

*Changes Proposed to the Currently Designated Use Class*: As shown in Figure 2, the Department recommends that the unnamed tributary to Deer Creek be redesignated to Class III-P.

*Rationale for the Existing Use Determination*: The unnamed tributary to Deer Creek supports a self-sustaining brook trout population and has water temperatures that meet the Use Class III-P criteria.

Figure 2: Existing Use Determination of Unnamed Tributary to Deer Creek